UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/344,688	06/25/1999	ARTHUR ALLEN	BW-02	9340

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EXAMINER
ZIA, SYED

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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	09/344,688	ALLEN, ARTHUR
	Examiner	Art Unit	
	Syed Zia	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 January 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

This office action is in response to amendment and request for reconsideration filed on

January 22, 2007. Original application contained Claims 1-14. Applicant currently amended

Claims 1, 6, 9, 14, and added new Claim 15. Applicant previously amended Claims 1-14. The

amendment filed on January 22, 2007 have been entered and made of record. Therefore, Claims

1-15 are pending for consideration.

Response to Arguments

Applicant's arguments filed on January 22, 2007 have been fully considered but they are

not persuasive because of the following reasons:

Regarding Claims 1, 9, and 14 applicants argued that the system of cited prior arts

[Huang et al. (U. S. Patent 6,052,384), and Mitra et al. (U. S. Patent 6,331,986)] does not teach,

" *the data rate from the server will never be less than the client's minimum data rate, which is a*

non-increasing function of time obtained by dividing the content not yet delivered by the

remaining play time."

This is not found persuasive. The system of cited prior art clearly teaches a method for

providing resource allocation for optimal routing and optimal bandwidth allocation in a network

that supports plural subnetworks and plural communication services in multi service virtual

private networks where each source-destination pair communicating via a given subnetwork and

a given class of service. The system also determine a traffic rate to be offered to each of a set of permissible routes between that source and that destination, in the given subnetwork and service class thus allocating a respective bandwidth to each link of each subnetwork (Alie: Huang: col.3 line 50 to col.4 line 34, col.8 line 1 to col.11 line 20, col. 15 line 10 to col.17 line 55, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and col.11 line 50 to col.14 line 5).

As a result, the system of cited prior art does implement and teaches a system and method that relates to multimedia servers which service many clients simultaneously for the delivery of multimedia content which is used and played back at each client by determining optimal delivery rates to each client and whether new clients may be accepted without diminishing the quality of service to existing clients.

Applicants clearly have failed to explicitly identify specific claim limitations, which would define a patentable distinction over prior arts.

The examiner is not trying to teach the invention but is merely trying to interpret the claim language in its broadest and reasonable meaning. The examiner will not interpret to read narrowly the claim language to read exactly from the specification, but will interpret the claim language in the broadest reasonable interpretation in view of the specification. Therefore, the examiner asserts that cited prior art does teach or suggest the subject matter broadly recited in independent Claims 1, 9 and 14 and in subsequent dependent Claims. Accordingly, rejections for claims 1-15 are respectfully maintained.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al.

(U. S. Patent 6,052,384), and further in view of Mitra et al. (U. S. Patent 6,331,986).

Regarding Claim 1, 9, and 14 Huang teaches a method for optimal multimedia content delivery

over networks from a server to one or more clients, comprising: delineating a state variable that

represents a data rate to each client; delineating a set of requirement conditions which represent

time varying constraints on the data rate of said multimedia contents (col.3 line 50 to col.4 line

34, and col.8 line 1 to col.11 line 20) said conditions including:

Although the system disclosed by Huang shows all the features of the claimed limitation,

but Huang does not specifically disclose performing periodic computations in compliance with

claimed conditions to obtain a state value that maximizes a cost function.

In an analogous art, Mitra, on the other hand discloses computing environment that

relates to finding; the total data rate for all clients does not exceed the maximum throughput of

the server or network, whichever is least; the data rate from server to client does not exceed the

maximum data rate for the client; the data rate of the client will never overflow a client buffer;

the server will never underflow; and the data rate from the server will never be less than the

client's minimum data rate, which is a non-increasing function of time obtained by dividing the

content not yet delivered by the remaining play time and wherein the minimum flow rate ensures

that all required content will be available to each client when needed; delineating a cost function

which represents the value of a proposed solution and performing periodic computations in

compliance with conditions to obtain a state value that maximizes said cost function (col.3 line

35 to col.4 line 48 to line 67, and col.11 line 50 to col.14 line 5).

Therefore, It would have been obvious to one ordinary skilled in the art at the time of invention

to combine the teachings of Huang and Mitra, because Mitra's method of resource allocation and

routing in multi-service networks would not only promote optimal routing and optimal

bandwidth allocation in Huang network that supports plural sub-networks and plural

communication services during receiving data from host computing devices but will also

distribute traffic among available routes and allocating bandwidth resources to such routes in

communication networks of that kind.

As per claim 2, wherein said conditions further include the current maximum client data

rate is given by the minimum of: the stored initial maximum client data rate; the data rate

required to fill the remaining client buffer during the current of said periodic computations; the

data rate required to complete the delivery of said multimedia content; the client data rate never

exceeds said current maximum client data rate, whereby said current maximum client data rate is

periodically recomputed to maintain an optimal solution over a given period of time (Mitra: col.3

line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line 5).

As per claim 3, wherein: said cost function represents maximal throughput and is given

by the sum of said client data rates for all active clients (Mitra: col.3 line 35 to col.4 line 48 to

line 67, and col. 11 line 50 to col.14 line 5).

As per claim 4 wherein: said cost function represents maximal charge and is given by the sum for all active clients of said client data rates times the client's cost of service (Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line 5).

As per claim 5, for bandwidth allocation for delivery of multimedia data from server to one or more clients over a network, comprising the steps of: determining the maximum flow rate and minimum flow rate for each client; determining the flow rate range for each client as given by the difference between said maximum flow rate and said minimum flow rate; initializing current flow rate for each client as said minimum flow rate and summing said flow rate into total server flow rate; and allocating remaining server bandwidth to remaining clients until they each saturate or no bandwidth remains (Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line 5) .

As per claim 6, wherein said step of allocating remaining server bandwidth to remaining clients comprising: sorting the list of clients according to said flow rate range; determining equally-allocated remaining server bandwidth if allocated evenly to all remaining unprocessed clients; determining the range of remaining client bandwidth as given by the difference between said maximum flow rate and said minimum flow rate; determining saturation by comparing said equally-allocated remaining server bandwidth and said range of remaining client bandwidth, and allocating the lesser of these two amounts to each remaining client flow rate; and whereby allocating flow to remaining clients based upon the sorted client range flow rates and determining allocation of remaining server bandwidth based upon a comparison of saturation of server versus saturation of each client maximizes allocation of total bandwidth for maximal flow

rate to maximum number of clients (Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11

line 50 to col.14 line 5).

As per Claim7, for bandwidth allocation for delivery of multimedia data from server to

one or more clients over a network, comprising the steps of: determining the maximum flow rate

and minimum flow rate for each client; determining the flow rate range for each client as given

by the difference between said maximum flow rate and said minimum flow rate; sorting the list

of clients according to said flow rate range; initializing current flow rate for each client as said

minimum flow rate and summing said flow rate into total server flow rate; and_ allocating

remaining server bandwidth to remaining clients such that lower paying clients receive

bandwidth only if higher paying ones are saturated (Huang: col.3 line 35 to col.4 line 48 to line

67, and col.11 line 50 to col.14 line 5, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and

col. 11 line 50 to col.14 line 5).

As per Claim8, wherein said step of allocating remaining server bandwidth to remaining

clients comprises the steps of: for each remaining unprocessed client: determining

equally-allocated remaining server bandwidth if allocated evenly to all remaining unprocessed

clients; determining the range of remaining client bandwidth as given by the difference between

said maximum flow rate and said minimum flow rate; determining saturation by comparing said

equally-allocated remaining server bandwidth and said range of remaining client bandwidth, and

allocating the lesser of these two amounts to each remaining client flow rate; and whereby

allocating flow to remaining clients based upon the sorted client range flow rates and

determining allocation of remaining server bandwidth based upon a comparison of saturation of

server versus saturation of each client maximizes allocation of total bandwidth for maximal flow

rate to maximum number of clients ((Huang: col.3 line 35 to col.4 line 48 to line 67, and col.11

line 50 to col.14 line 5, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line 50 to

col.14 line 5).

As per Claim 10, wherein said remaining bandwidth available to the server is given by

said server swing capacity (Huang: col. 15 line 10 to col.17 line 55).

As per Claim 11, wherein said remaining bandwidth available to the server is give by said

server swing capacity less a server flow safety margin, thereby allowing server capacity to be

subsequently lowered by up to the safety margin without requiring load shedding, and without

affecting client sessions in process (Huang: col. 19 line 5 to line 38, and col.20 line 4 t line 29).

As per Claim 12, wherein said step of allocating server bandwidth for each prospective

client which will fit without server bandwidth saturation comprises: allocating server bandwidth

to each prospective client sequentially until a prospective client is located in which said average

data play rate exceeds said server swing capacity (Huang: col. 13 line 40 to col.14 line 45).

As per Claim 13, wherein said step of allocating server bandwidth for each client which

will fit without server bandwidth saturation comprises: allocating server bandwidth to each

prospective client sequentially for each client which can be activated without server bandwidth

saturation ((Huang: col. 15 line 10 to col.17 line 55).

As per Claim 15, wherein the data rate ensures that all required content will be available

to each client when needed (Huang: col.3 line 35 to col.4 line 48 to line 67, and col.11 line 50 to

col.14 line 5, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line

5).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-14 of the instant Application No. 09/344,688 (hereafter '688) are rejected

under the judicially created doctrine of obviousness-type double patenting as being unpatentable

over claims 1-33 of U. S. Patent No. 6,850,695 (hereafter '695). Although the conflicting claims

are not identical, they are not patentably distinct from each other because in view of the

obviousness type double patenting rationale enunciated in **Georgia-Pacific Corp. v. United**

States Gypsum Co., 195 F.3d 1322, 1326, 52 USPQ2d 1590, 1593 (Fed. Cir. 1999), the instant

application's '688 above mentioned claims merely disclose a method for call and or connection

acceptance control and the optimal delivery of multimedia, such as audio, video data over

networks by monitoring and optimizing throughput and charges to maximize the number of

simultaneous clients without sacrificing quality-of-service for already-connected clients which is

a obvious variation of method of bandwidth allocation for delivery of stored digital content from

at least one server device to at least one client device through a network by determining cost

function based on a control variable which represents a target flow rate from the server device to

each client device and time-varying constraints on the flow rate of the content as claimed in

patent '695.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Syed Zia whose telephone number is 571-272-3798. The

examiner can normally be reached on 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sz
April 10, 2007